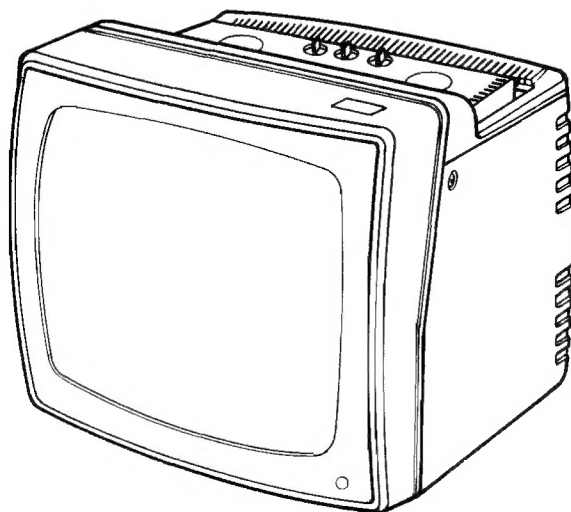


# SERVICE MANUAL

## DATA DISPLAY

608

DM 5912CXA DM 5912CXC (EUROPE)
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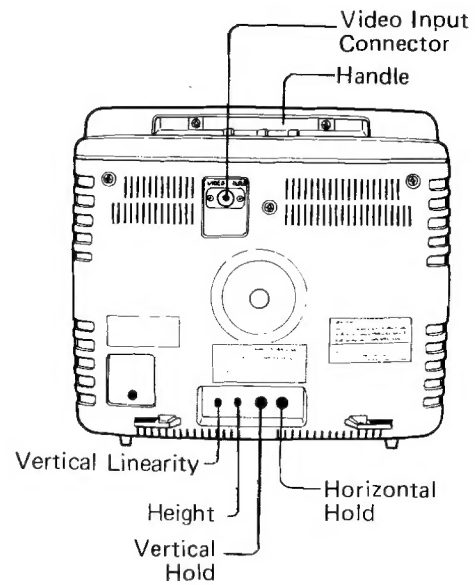
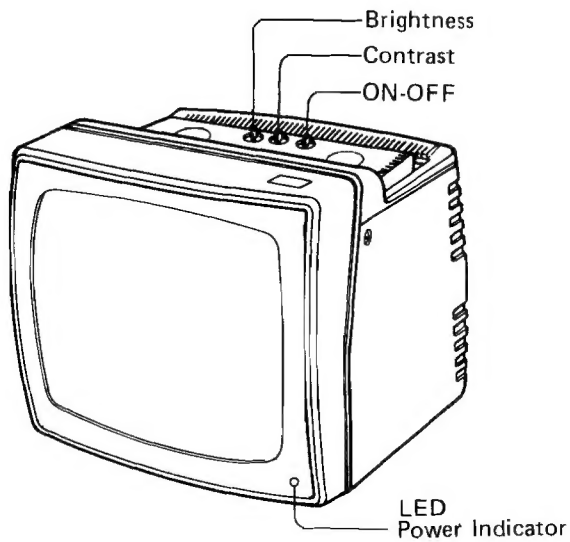


### SPECIFICATIONS

AC power source	220 Volts 50 Hz
Power rating	26 Watts
Input signal	Composite video signal, sync. negative $1.0^{+0.5}_{-0.3}$ Vp-p, 75 ohms
Picture tube	31 cm diagonal P31 phosphor (green)
Video bandwidth	18 MHz
Display area	Horizontal 21 cm (46 $\mu$ s) Vertical 15 cm (18.23ms)
Display format	1920 characters 80 char. x 24 lines (5 x 7 dot)
Horizontal rate	15.15 KHz
Vertical rate	50 Hz
Dimensions	32 (W) x 28.4 (H) x 30.8 (D) cm (approx.)
Weight	7.3 kg (approx.)

NOTE: Specifications are subject to change without notice.

## CONTROLS AND TERMINAL IDENTIFICATION



## MECHANICAL DISASSEMBLIES

### CABINET BACK REMOVAL

1. Carefully lay cabinet face down on soft mat.
2. Remove seven (1 ~ 7) screws securing the cabinet back.

### TOP PANEL REMOVAL

1. Remove two (8 ~ 9) screws. Separate top panel from cabinet.

### CHASSIS REMOVAL

1. First remove cabinet back.
2. Disconnect anode cap, picture tube socket and grounding connector. Then slightly loosen the screw securing the deflection yoke.
3. Remove a (10) screw. Separate chassis from cabinet.

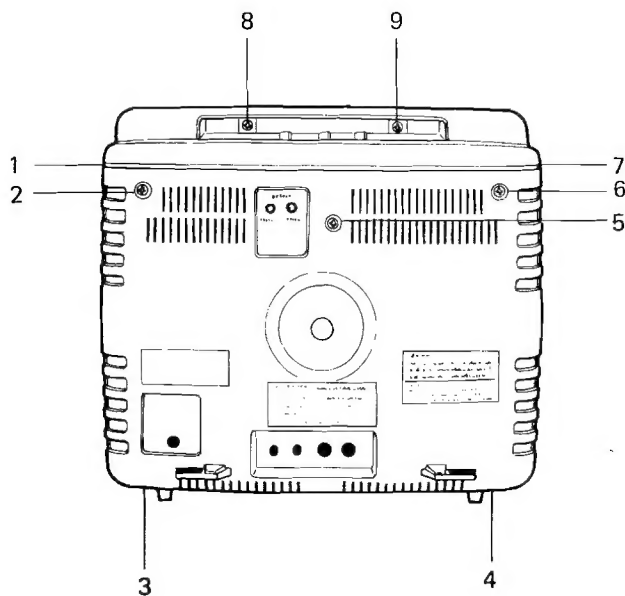


Fig. 1

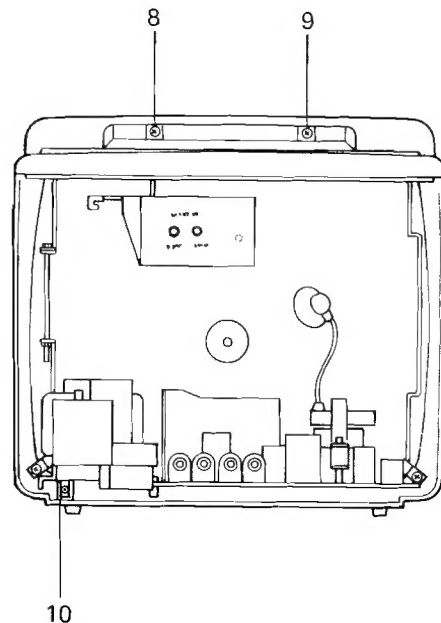


Fig. 2

## IMPORTANT NOTICE FOR SERVICE PERSONNEL BEFORE SERVICING

### PLEASE READ BEFORE ATTEMPTING SERVICE

1. Line voltage must be kept within  $\pm 2.5\%$  of the rated voltage.
2. When operating at line voltage, confirm the DC voltage at TP1 is  $11.2 \pm 0.1$  V. (Adjust VR701)
3. DO NOT DISCHARGE, ARC, OR MEASURE HIGH VOLTAGE WHEN HIGH VOLTAGE LEAD IS CONNECTED TO CRT. DISCHARGE 2ND ANODE OF CRT ONLY AFTER HIGH VOLTAGE LEAD HAS BEEN DISCONNECTED. DO NOT DISCHARGE HIGH VOLTAGE LEAD AT ANY TIME, DAMAGE TO TRANSISTORS MAY RESULT.
4. While the receiver is in operation, do not attempt to connect or disconnect any wires.
5. Disconnect all power before attempting any repairs.
6. When the power is on, do not attempt to short any portion of the circuit. This shorting may cause damage to the transistors in the receiver.

## ADJUSTMENT

Apply power and composite video signal (alphanumeric information) to the data display.

### CENTERING

1. Loosen the Deflection Yoke (L901) clamp and carefully move the yoke on the neck of the picture tube as far forward as possible.  
Rotate the yoke until the top and bottom edges of the raster are straight. Tighten the clamp.
2. Center the raster by rotating the centering rings.

### SUB-BRIGHTNESS

1. Set Brightness (VR202) and Contrast (VR201) controls on the top of cabinet to maximum.
2. Adjust Sub-Brightness control (VR203) for visual cutoff of the raster.

### FOCUS

Adjust Focus control (VR602) for providing the best focus.

### HORIZONTAL HOLD

1. Set Horizontal Hold control (VR601) to the center position.
2. Adjust Horizontal Oscillator coil (L601) to place the information to the center of raster. (Provide full information on display area.)

### HORIZONTAL WIDTH AND LINEARITY

1. Adjust Width control (L604) to obtain the optimum width for full information. (If the recommended input signal format used, the width is 21 cm.)
2. If horizontal linearity is unsatisfied, adjust Linearity coil (L603) for optimum linearity.

### VERTICAL HEIGHT AND LINEARITY

1. Synchronize the vertical frequency to the information signal by Vertical Hold control (VR503).
2. Adjust Vertical Linearity control (VR501) for the best linearity and Height control (VR502) to obtain the optimum height for full information.  
(If the recommended input signal format used, the height is 15 cm.)

## VIDEO INPUT CONNECTOR

As shown in the Fig. 3 the signal input cable from the computer is connected to the signal input connector.

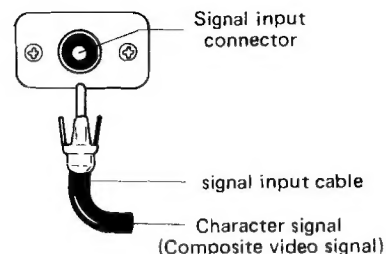


Fig. 3

## INPUT SIGNAL FORMAT

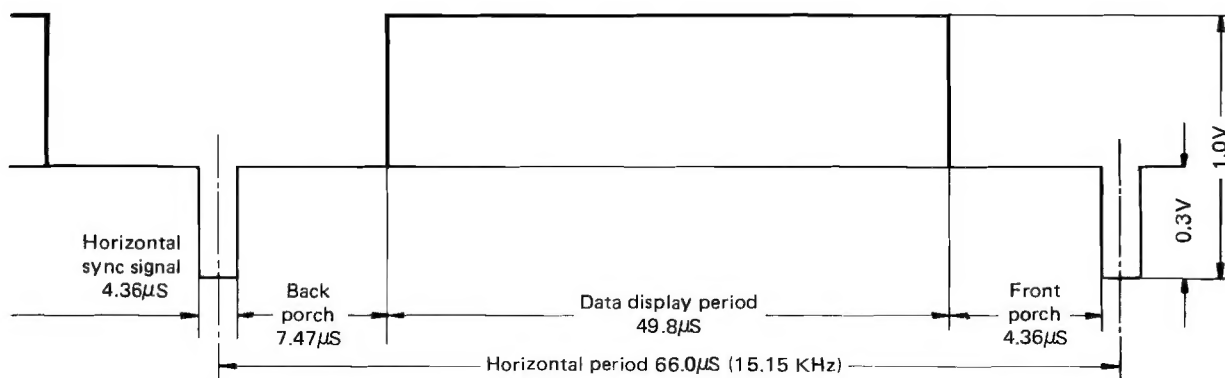
The recommended Input Signal Format is shown in Fig. 4.

Vertical rate.....50Hz

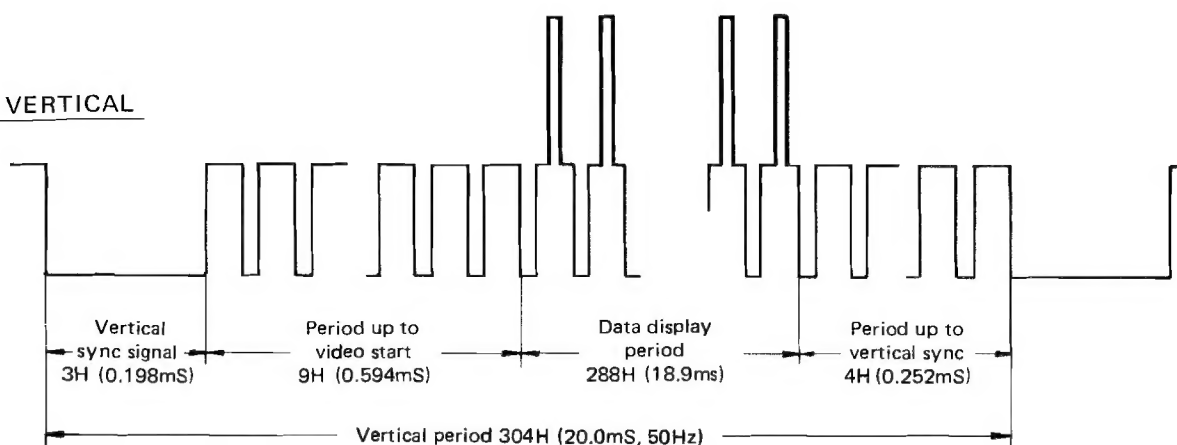
Horizontal rate.....15.15KHz

Note; H.....Horizontal period

### HORIZONTAL



### VERTICAL



Note; H ..... Horizontal period.

Fig. 4

## HOW TO PROVIDE THE COMPOSITE VIDEO SIGNAL

The schematic diagram in Fig. 5 shows to make the composite video signal from TTL separate signals.

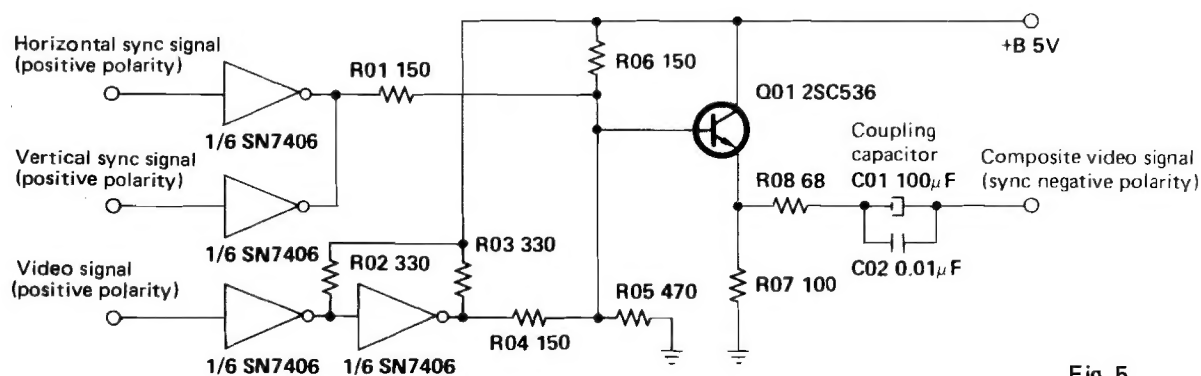
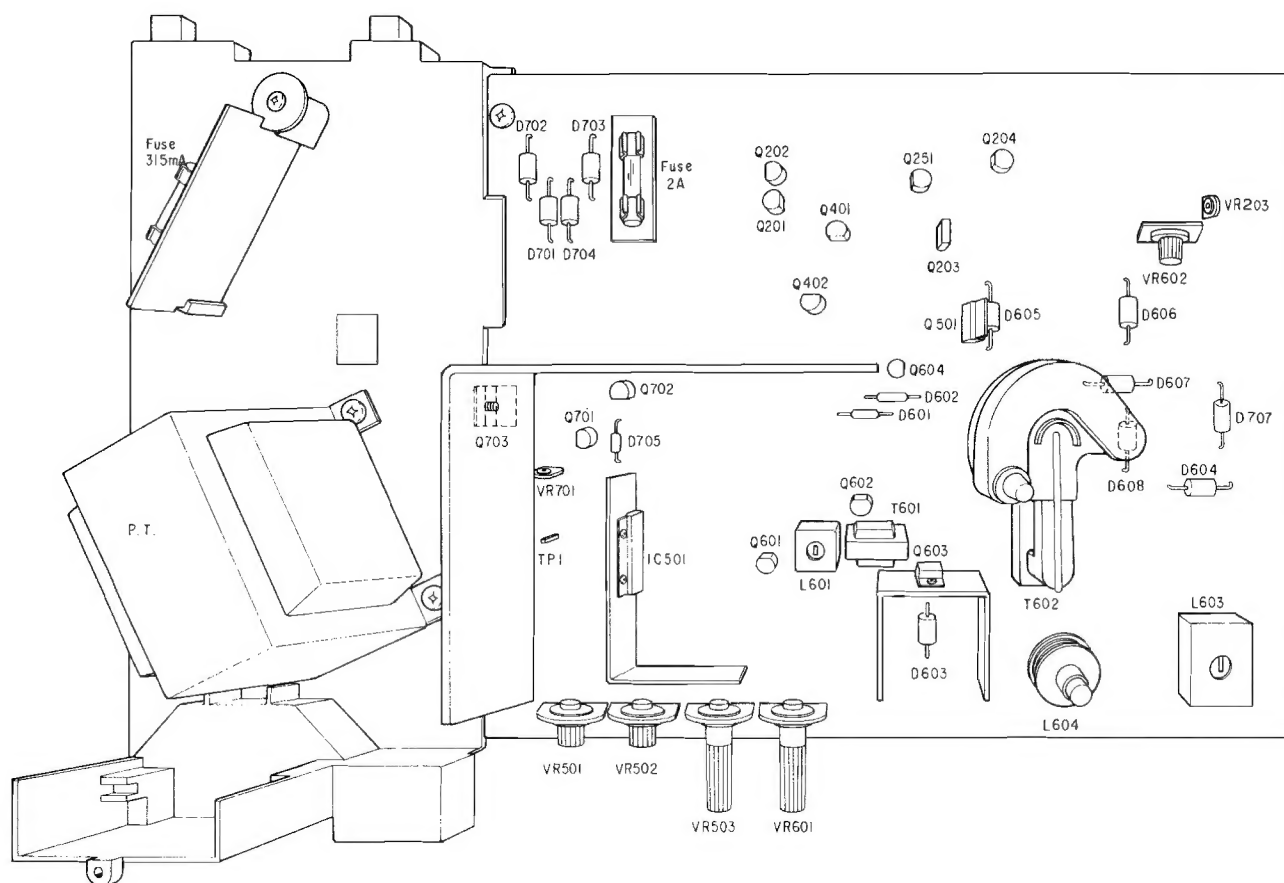
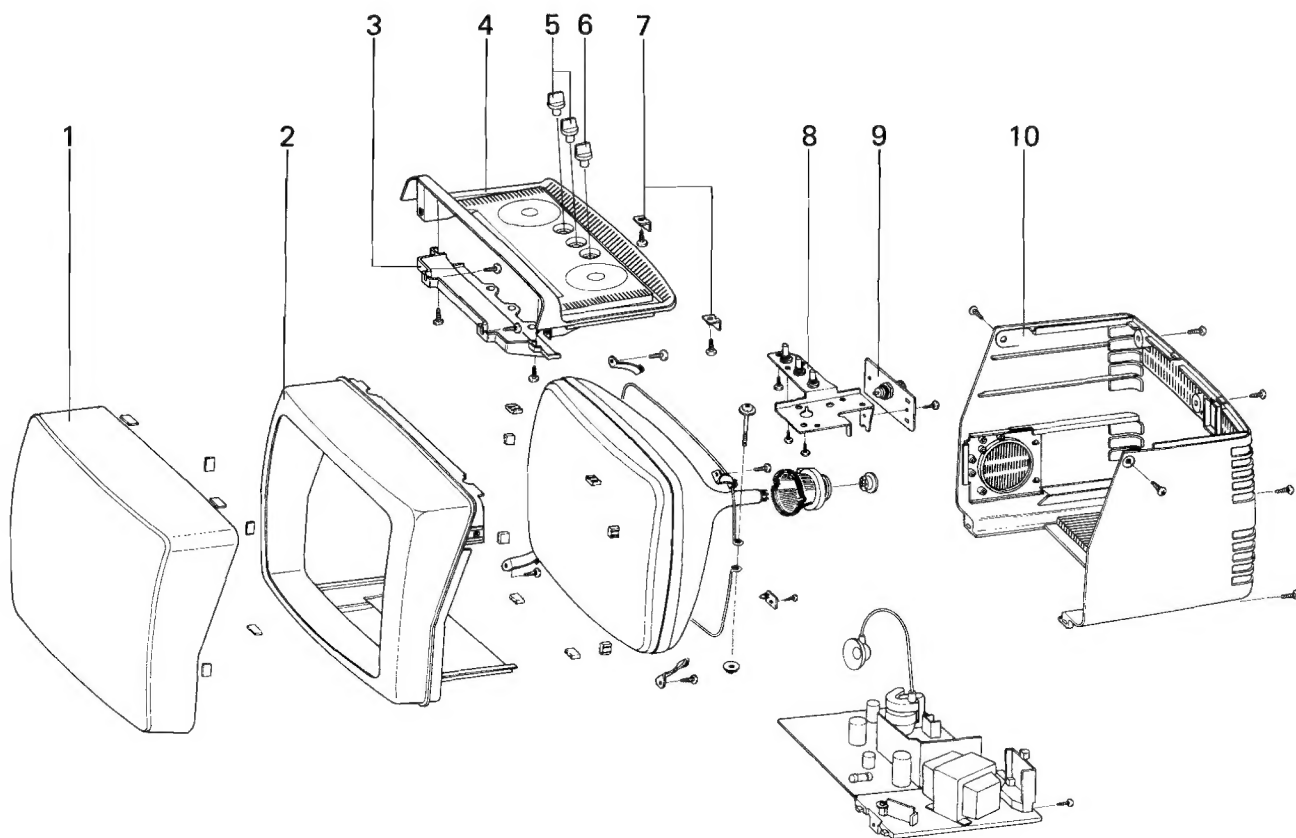


Fig. 5

## PARTS LOCATION



## REPLACEMENT PARTS LIST



Key No.	Parts No.	Description	Q'ty
1	111 0 1141 07370	SAFETY SHIELD ASSY-TJF (DM5912CXA)	1
	111 0 1141 07371	SAFETY SHIELD ASSY-TJF-A1 (NON-GLARE) (DM5912CXA)	1
2	111 0 1121 08970	CABINET ASSY-TJF (DM5912CXA)	1
	111 0 1121 08976	CABINET ASSY-TJF-A3 (DM5912CXC)	1
3	111 2 1291 10172	TOP PANEL COVER TJF-A1 (DM5912CXA)	1
	111 2 1291 10176	TOP PANEL COVER-TJF-A4 (DM5912CXC)	1
4	111 0 1241 04174	TOP PANEL ASSY-MBE-B (DM5912CXA)	1
	111 0 1241 04181	TOP PANEL ASSY-MBE-G (DM5912CXC)	1
5	111 0 1641 13872	KNOB ASSY-TJF-A2	2
6	111 0 1641 13873	KNOB ASSY-TJF-A3	1
7	111 2 3231 16470	BACK MTG BRKT-TJF	2
8	111 2 3511 16470	CONTROL PLATE-TJF	1
9	111 2 3651 21870	VIDEO TERMINAL PLATE-MBE	1
10	111 0 1161 14483	CABINET BACK ASSY-MBE-K (DM5912CXA)	1
	111 0 1161 14455	CABINET BACK ASSY-MBE-AA (DM5912CXC)	1

## PRODUCT SAFETY NOTICE

PRODUCT SAFETY SHOULD BE CONSIDERED WHEN A COMPONENT REPLACEMENT IS MADE IN ANY AREA OF A UNIT. COMPONENTS INDICATED BY A MARK  $\Delta$  IN THIS PARTS LIST AND THE SCHEMATIC DIAGRAM SHOW COMPONENTS WHOSE VALUE HAVE SPECIAL SIGNIFICANCE TO PRODUCT SAFETY. IT IS PARTICULARLY RECOMMENDED THAT ONLY PARTS SPECIFIED ON THE FOLLOWING PARTS LIST BE USED FOR COMPONENT REPLACEMENT POINTED OUT BY THE MARK.

## PARTS LIST

Schematic Location	Parts No.	Description	Q'ty	Schematic Location	Parts No.	Description	Q'ty
CHASSIS PARTS				ELECTRICAL PARTS			
	111 0 6211 05970	POWER RAD PL AY-MBE	1	L201	4 2531 04771	FILTER COIL	1
	111 2 3121 16571	CHASSIS FRAME-TJF-B	1	L251	4 2531 14270	FILTER COIL 15MH	1
	111 2 3641 13970	LED HOLDER-MBE	2	or	4 2721 01531	PEAKING COIL 15MH	1
	111 2 6111 29770	PT SHIELD CASE-MBE	1	L601	4 2731 06170	HORIZ OSC COIL	1
	111 2 6211 22670	HOR RAD PLATE-TJJ	1	L602	4 2530 03600	HORIZ FILTER CHOKE	1
	111 2 6211 22770	VERT RAD PLATE-TJJ	1	or	4 2530 03601	HORIZ FILTER CHOKE	1
	111 2 6211 24870	TRANS RAD PLATE-MBE	1	⚠ L603	4 2741 06170	LINEARITY COIL	1
	111 2 6220 10100	CONNECTING TIP-HW	1	⚠ or	4 2741 06171	LINEARITY COIL	1
	111 2 7211 13270	WIRE BAND-TCM	2	⚠ L604	4 2741 05870	WIDTH COIL	1
	111 2 7211 14870	WIRE BAND-THJ-B	1	⚠ L901	4 2761 50070	DEFLECTION YORK	1
	111 2 7221 11670	CORD FIXER-TML	1	T601	4 2731 06270	HORIZ DRIVE TRANS	1
				⚠ T602	4 2751 51000	FLYBACK TRANS	1
				⚠ T701	4 2511 46422	POWER TRANS	1
PACKING MATERIALS				SMALL PARTS			
	111 2 8990 00100	RUBBER BAND-ML	1		4 2261 43871	PC BOARD E9B	1
	111 6 1421 59883	IND CORR CASE-MBE-P (DM5912CXA)	1	⚠	4 2311 12270	ROTARY SWITCH	1
	111 6 1421 59886	IND CORR CASE-MBE-S (DM5912CXC)	1		4 2350 61600	TERMINAL SOCKET	1
	111 6 2511 17471	IND POLY COVER-VKE-B	1		4 2351 05470	CRT SOCKET	1
	111 6 3111 46570	TOP INNER CUSH-TJF	1	⚠	4 2351 45473	FUSE HOLDER	1
	111 6 3111 46671	BOT INNER CUSH-TJF-B	1	⚠	4 2351 46570	FUSE HOLDER	1
	111 6 3231 11170	WRAPPING SHEET-TJF	1		4 2351 76170	SOCKET PHONO 1P	1
					4 2351 76171	SOCKET PHONO 1P	1
					4 2360 04300	GT PIN	1
ACCESSORIES AND LABELS					4 2361 15770	1P MICRO PLUG	4
	111 6 2701 14212	PM-ASSY-MBE-N (DM5912CXA)	1		4 2381 10271	TERMINAL BLOCK VDE-B	1
0001	111 6 2711 05870	ENVELOPE-SR-C	(1)	⚠	111 0 9131 53200	AC CORD ASSY-CEE	1
0002	111 6 4211 26159	SCHEMATIC DIAG-E9	(1)	⚠ F701	4 2341 06770	FUSE 2A 250V SEMKO	1
0003	111 6 4111 97782	INST MANUAL-MBE-N	(1)	⚠ F702	4 2341 12970	FUSE 3.15A 250V SEMKO	1
	111 6 2701 14227	PM ASSY-MBE-AF (DM5912CXC)	1	VARIABLE RESISTORS			
0001	111 6 2711 05870	ENVELOPE-SR-C	(1)	VR201	4 2221 26470	16FRN20FE-500P	1
0002	111 6 4211 26159	SCHEMATIC DIAG-E9	(1)	or	4 2221 29870	16FRN20FE-500P	1
0003	111 6 4111 97795	INST MANUAL-MBE-AD	(1)	VR202	4 2221 26370	16FRN20FB-500KP	1
	111 6 4551 16970	SERIAL NO LABEL	1	or	4 2221 29970	16FRN20FB-500KP	1
	111 6 4721 30371	CRT CAUTION LABEL-B	1	VR203	4 2221 38370	8LFRB-1M	1
				VR501	4 2221 27570	18K2FR8B-5K	1
SCREWS-CABINET				VR502	4 2221 28570	18K2FR8B-50K	1
	102 3 1604 01201	STT 1, 4.0x12, Z1	5	VR503	4 2221 28670	18K2FR25B-50K	1
	102 3 1604 01206	STT 1, 4.0x12, C2	2	VR601	4 2221 28670	18K2FR25B-50K	1
	102 3 2203 00802	SBRT2, 3.0x8, Z1	1	VR602	4 2221 35070	15CHFR7B-1M	1
	102 3 2203 01001	SBRT2, 3.0x10, Z1	1	⚠ VR701	4 2221 29470	8PFRB-1K	1
	102 3 2204 01003	SBRT2, 4.0x10, Z1	4	CAPACITORS			
	102 3 2204 01202	SBRT2, 4.0x12, Z1	9	C201	C1CRE-106A--	ELECT 10M 16V	1
SCREWS-CHASSIS				C202	C1HYDK102W--	CERAMIC 1000P W 50V	1
	101 3 1103 00802	SNB, 3.0x8, Z1	2	C203	C1ARE-477A--	ELECT 470M 10V	1
	102 3 1204 01202	SNT2, 4.0x12, Z1	4	C204	C1CRE-226A--	ELECT 22M 16V	1
	102 3 2203 00601	SBRT2, 3.0x6, Z1	4	C206	C1HYDK103W--	CERAMIC 10000P W 50V	1
	102 3 2203 00802	SBRT2, 3.0x8, Z1	4	C207	C1HYDK102W--	CERAMIC 1000P W 50V	1
	102 3 2203 01602	SBRT2, 3.0x16, Z1	1	C209	C2CRE-106A--	ELECT 10M 160V	1
	102 3 2204 01003	SBRT2, 4.0x10, Z1	2	C210	C2ERE-107A--	ELECT 100M 250V	1
	104 3 1103 00005	ZRN1, 3.0	2	C211	C2FRE-105A--	ELECT 1M 315V	1
	105 3 1405 00003	KUW, 5.0, Z1	1	C251	C1HCDK101SL-	CERAMIC 100P SL 50V	1
	111 2 4211 15470	BTBR, 3.0x20, Z1	1	C252	C1HYDK681W--	CERAMIC 680P W 50V	1
	111 2 4211 15570	CUP STNB, 5.0x10, Z1	1	C253	C1HFRK333A--	MYLAR 0.033M 50V	1
	111 3 1103 01601	SBW, 3.0x16.0x10, Z1	1	C254	C1CRE-106A--	ELECT 10M 16V	1

- NOTES: 1. Parts orders must contain Model Number, Parts Number and Description.  
2. Ordering quantity of resistors, capacitors and screws must be multiple of 10 pcs.  
3. Component parts indicated by parentheses in the column Q'ty are not available.

# PARTS LIST

Schematic Location	Parts No.	Description	Q'ty	Schematic Location	Parts No.	Description	Q'ty
C401	C1HRE-105A--	ELECT 1M 50V	1	R209	R2ESPJ271A	CARBON 270 1/4W J	1
C402	C1EYDK223C--	CERAMIC 0.022M C 25V	1	R210	R2ESPJ680A	CARBON 68 1/4W J	1
or	C1HFRK223A--	MYLAR 0.022M 50V	1	R212	R2ESPJ392A	CARBON 3.9K 1/4W J	1
C403	C1EYDK223C--	CERAMIC 0.022M C 25V	1	R213	R2ESPJ222A	CARBON 2.2K 1/4W J	1
or	C1HFRK223A--	MYLAR 0.022M 50V	1	R214	R2ESPJ823A	CARBON 82K 1/4W J	1
C404	C1CRE-477A--	ELECT 470M 16V	1	R215	R2ESPJ104A	CARBON 100K 1/4W J	1
C501	C1HRE-225A--	ELECT 2.2M 50V	1	R216	R2ESPJ270A	CARBON 27 1/4W J	1
C502	C1CRE-106A--	ELECT 10M 16V	1	R217	R3DXPJ222A	OXIDE-M 2.2K 2W J	1
C503	C1ARE-227A--	ELECT 220M 10V	1	R219	R2HCPK223A	SOLID 22K 1/2W K	1
C504	C1EYDK682C--	CERAMIC 6800P C 25V	1	R220	R2ESPJ104A	CARBON 100K 1/4W J	1
or	C1HFRK682A--	MYLAR 0.0068M 50V	1	R221	R2ESPJ125A	CARBON 1.2M 1/4W J	1
C505	C1EYDK682C--	CERAMIC 6800P C 25V	1	R222	R2ESPJ684A	CARBON 680K 1/4W J	1
or	C1HFRK682A--	MYLAR 0.0068M 50V	1	R223	R2ESPJ274A	CARBON 270K 1/4W J	1
C506	C1EEEM105S--	ELECT 1M 25V	1	R225	R2ESPJ271A	CARBON 270 1/4W J	1
or	C1ETDM105A--	TANTAL 1M 25V	1	R251	R2ESPJ103A	CARBON 10K 1/4W J	1
or	C1ETEM105A--	TANTAL 1M 25V	1	R252	R2ESPJ394A	CARBON 390K 1/4W J	1
or	C1EUEM105A--	ELECT 1M 25V	1	R253	R2ESPJ332A	CARBON 3.3K 1/4W J	1
C507	C1ERE-475A--	ELECT 4.7M 25V	1	R254	R2ESPJ221A	CARBON 220 1/4W J	1
C508	C1CRE-477A--	ELECT 470M 16V	1	R402	R2ESPJ222A	CARBON 2.2K 1/4W J	1
C509	C1CTDM475A--	TANTAL 4.7M 16V	1	R403	R2ESPJ124A	CARBON 120K 1/4W J	1
or	C1CTEM475A--	TNATAL 4.7M 16V	1	R404	R2ESPJ564A	CARBON 560K 1/4W J	1
or	C1CUEM475A--	ELECT 4.7M 16V	1	R405	R2ESPJ152A	CARBON 1.5K 1/4W J	1
or	C1EEEM475S--	ELECT 4.7M 25V	1	R406	R2ESPJ271A	CARBON 270 1/4W J	1
C510	C1CRE-106A--	ELECT 10M 16V	1	R407	R2ESPJ561A	CARBON 560 1/4W J	1
C511	C1EYDK823C--	CERAMIC 0.082M C 25V	1	△ R408	R2HFPJ100A	F-OXIDE 10 1/2W J	1
or	C1HFRK823A--	MYLAR 0.082M 50V	1	R501	R2ESPJ102A	CARBON 1K 1/4W J	1
C512	C1ARE-228A--	ELECT 2200M 10V	1	R502	R2ESPJ103A	CARBON 10K 1/4W J	1
C513	C1HRE-225A--	ELECT 2.2M 50V	1	R503	R2ESPJ472A	CARBON 4.7K 1/4W J	1
C514	C1CRE-106A--	ELECT 10M 16V	1	R504	R2ESPJ103A	CARBON 10K 1/4W J	1
C515	C2GQRK223A--	POLYPR 0.022M 400V	1	R505	R3APPJ0R6A	OXIDE-M 0.6 1W J	1
C516	C2HYDK391W--	CERAMIC 390P W 500V	1	R506	R2ESPJ273A	CARBON 27K 1/4W J	1
C601	C1HRE-474A--	ELECT 0.47M 50V	1	R507	R2ESPJ123A	CARBON 12K 1/4W J	1
C602	C1HFRK472A--	MYLAR 0.0047M 50V	1	R508	R2ESPJ153A	CARBON 15K 1/4W J	1
C603	C1HYDK331W--	CERAMIC 330P W 50V	1	R509	R2ESPJ272A	CARBON 2.7K 1/4W J	1
C604	C1HFRK472A--	MYLAR 0.0047M 50V	1	R510	R2ESPJ183A	CARBON 18K 1/4W J	1
C605	C1CRE-108A--	ELECT 1000M 16V	1	R511	R2ESPJ274A	CARBON 270K 1/4W J	1
C606	C1ERE-475A--	ELECT 4.7M 25V	1	R512	R2ESPJ103A	CARBON 10K 1/4W J	1
C607	C1HFRK104A--	MYLAR 0.1M 50V	1	R513	R2ESPJ681A	CARBON 680 1/4W J	1
C608	C2AQRJ153A--	POLYPR 0.015M 100V	1	R514	R2HCPK274A	SOLID 270K 1/2W K	1
C609	C1HFRK473A--	MYLAR 0.047M 50V	1	R515	R2HCPK274A	SOLID 270K 1/2W K	1
C610	C1HFRM104A--	MYLAR 0.1M 50V	1	R516	R2ESPJ153A	CARBON 15K 1/4W J	1
C611	C1HFRK154A--	MYLAR 0.15M 50V	1	R601	R2ESPJ123A	CARBON 12K 1/4W J	1
C612	C1CRE-477A--	ELECT 470M 16V	1	R602	R2ESPJ822A	CARBON 8.2K 1/4W J	1
C613	C1CRE-477A--	ELECT 470M 16V	1	R603	R2ESPJ331A	CARBON 330 1/4W J	1
C614	C1EAEM006T--	ELECT 8.2M 25V	1	R604	R2ESPJ331A	CARBON 330 1/4W J	1
C615	C1ARE-108A--	ELECT 1000M 10V	1	R605	R2ESPJ223A	CARBON 22K 1/4W J	1
△ C616	C2DQRM473A--	POLYPR 0.047M 200V	1	R606	R2ESPJ562A	CARBON 5.6K 1/4W J	1
C618	C1HFRK473A--	MYLAR 0.047M 50V	1	R607	R2ESPJ562A	CARBON 5.6K 1/4W J	1
C619	C1HFRK102A--	MYLAR 0.001M 50V	1	R608	R2ESPJ681A	CARBON 680 1/4W J	1
C620	C1HFRK104A--	MYLAR 0.1M 50V	1	R609	R2ESPJ332A	CARBON 3.3K 1/4W J	1
C621	C2JQRM104A--	POLYPR 0.1M 630V	1	△ R610	R2HFPJ330A	F-OXIDE 33 1/2W J	1
C622	C2GQRM224A--	POLYPR 0.22M 400V	1	R611	R2ESPJ123A	CARBON 12K 1/4W J	1
C623	C2HYDM101W--	CERAMIC 100P W 500V	1	R612	R2ESPJ271A	CARBON 270 1/4W J	1
△ C705	C1VRE-020T--	ELECT 4700M 35V	1	R613	R2ESPJ152A	CARBON 1.5K 1/4W J	1
△ C706	C1CRE-226A--	ELECT 22M 16V	1	R614	R2ESPJ270A	CARBON 27 1/4W J	1
C707	C1EEEM475S--	ELECT 4.7M 25V	1	R615	R2ESPJ181A	CARBON 180 1/4W J	1
△ or	C1ETDM475A--	TANTAL 4.7M 25V	1	R616	R2HCPK220A	SOLID 22 1/2W K	1
△ or	C1ETEM475A--	TANTAL 4.7M 25V	1	R617	R2ESPJ332A	CARBON 3.3K 1/4W J	1
△ or	C1EUEM475A--	ELECT 4.7M 25V	1	R618	R2HCPK152A	SOLID 1.5K 1/2W K	1
△ C709	C2DQRK104A--	POLYPR 0.1M 200V	1	△ R619	R2HCPK391A	SOLID 390 1/2W K	1
FIXED RESISTORS				△ R620	R2HFPJ330A	F-OXIDE 33 1/2W J	1
R201	R2HCPJ750A	SOLID 75 1/2W J	1	△ R621	R2HCPK121A	SOLID 120 1/2W K	1
R202	R2ESPJ473A	CARBON 47K 1/4W J	1	△ R622	R2HCPK220A	SOLID 22 1/2W K	1
R203	R2ESPJ101A	CARBON 100 1/4W J	1	R623	R2ESPJ682A	CARBON 6.8K 1/4W J	1
R204	R2ESPJ333A	CARBON 33K 1/4W J	1	R624	R2ESPJ153A	CARBON 15K 1/4W J	1
R205	R2ESPJ681A	CARBON 680 1/4W J	1	R625	R2ESPJ473A	CARBON 47K 1/4W J	1
R206	R2ESPJ821A	CARBON 820 1/4W J	1	R701	R2ESPJ331A	CARBON 330 1/4W J	1
R207	R2ESPJ391A	CARBON 390 1/4W J	1	R702	R2ESPJ330A	CARBON 33 1/4W J	1
R208	R2ESPJ101A	CARBON 100 1/4W J	1	△ R703	R2ESPJ471A	CARBON 470 1/4W J	1
				△ R704	R2ESPJ101A	CARBON 100 1/4W J	1

- NOTES: 1. Parts orders must contain Model Number, Parts Number and Description.  
2. Ordering quantity of resistors, capacitors and screws must be multiple of 10 pcs.  
3. Component parts indicated by parentheses in the column Q'ty are not available.



## PARTS LIST

Schematic Location	Parts No.	Description	Q'ty
R705	R2ESPJ272A	CARBON 2.7K 1/4W J	1
R706	R2ESPJ122A	CARBON 1.2K 1/4W J	1
△ R707	R3RWVJ150A	WIRE-W 15 7W J	1
△ R708	R2HFPJ100A	F-OXIDE 10 1/2W J	1
R709	R2ESPJ122A	CARBON 1.2K 1/4W J	1
R901	R2ESPJ152A	CARBON 1.5K 1/4W J	1
R902	R2ESPJ152A	CARBON 1.5K 1/4W J	1
R903	R2ESPJ333A	CARBON 33K 1/4W J	1
R904	R2ESPJ223A	CARBON 22K 1/4W J	1

### TUBES AND SEMICONDUCTORS

D601	4 2020 03500	GE DIODE 1S188TV	1
D602	4 2020 03500	GE DIODE 1S188TV	1
△ D603	4 2021 10770	SI DIODE ERB24-02D	1
△ or	4 2021 15870	SI DIODE SM-1-02FR	1
D604	4 2021 09670	SI DIODE 1S1834	1
or	4 2021 21370	SI DI SM-1.5-02FRT	1
D605	4 2021 10770	SI DIODE ERB24-02D	1
or	4 2021 15870	SI DIODE SM-1-02FR	1
D606	4 2021 10470	SI DIODE ERB24-06D	1
D607	4 2021 10470	SI DIODE ERB24-06D	1
D608	4 2021 10470	SI DIODE ERB24-06D	1
△ D701	4 2021 10670	SI DIODE SIB01-02	1
△ D702	4 2021 10670	SI DIODE SIB01-02	1
△ D703	4 2021 10670	SI DIODE SIB01-02	1
△ D704	4 2021 10670	SI DIODE SIB01-02	1
△ D705	4 2021 14870	ZE DIODE WZ-063	1
or	4 2021 26870	ZE DIODE GZA6.2Y	1
D706	4 2021 17770	LED SLP-131B	1
△ D707	4 2021 07470	SI DIODE 1S2076	1
IC501	4 2061 08670	IC-UPC1031H2	1
or	4 2061 09970	IC-LA1385	1
Q201	TG2SC536----	SI TR 2SC536	1
Q202	TG2SA608----	SI TR 2SA608	1
Q203	TN2SC1941----	SI TR 2SC1941	1
Q204	TG2SC536--F--	SI TR 2SC536	1
Q251	TG2SC536--E--	SI TR 2SC536	1
Q401	TG2SA608----	SI TR 2SA608	1
Q402	TG2SC536--F--	SI TR 2SC536	1
Q501	TG2SC1755----	SI TR 2SC1755	1
or	TN2SC1520--3	SI TR 2SC1520	1
Q601	TG2SC536----	SI TR 2SC536	1
Q602	TG2SD400----	SI TR 2SD400	1
△ Q603	TG2SD823----	SI TR 2SD823	1
△ or	TN2SC2373----	SI TR 2SC2373	1
Q604	TG2SC536----	SI TR 2SC536	1
Q701	TG2SC536--F--	SI TR 2SC536	1
or	TN2SC945--P--	SI TR 2SC945	1
△ Q702	TG2SD400----	SI TR 2SD400	1
△ Q703	TG2SD613----	SI TR 2SD613	1
△ V901	QNM310KLB31-N	CRT 310KLB31 (DM5912CXA)	1
△ or	QTM310GLB31-A	CRT 310GLB31	1
△ or	QTM310GLB31-N	CRT 310GLB31	1
△ V901	QTM310GLB31NN	CRT 310CLB31-HT	1
△ or	QNM310KLB31NN	CRT 310KLB31-ARF (DM5912CXC)	1

## TERMINAL VIEW

2SA201 2SB187 	2SA495 	2SA608 2SA643 2SA659 2SA733 2SB598 2SC536 2SC929 2SC930 2SC945 2SC1175 2SC1293 2SC2271 2SC2228 2SD400 2SD438 	2SD314 2SD331 	2SD613 2SB507 2SB511 2SC1096 2SC1506 2SC1507 2SC1520 2SC1755 2SC1756 2SC2373 2SD823 2SD313 2SD325 2SD386 2SC1173 
2SC983 2SC1941 	2SD612 	2SB375 2SB407 2SB474 2SC1024 2SC1025 2SC1046 2SC1050 2SC1295 2SC1875 2SD24 2SD315 2SD353 2SD575 2SD627 2SC1892 	2SC2057 	LA4030P 5 6 7 8 4 3 2 1 Mark 
S2VC10 	1JZ61 1R5TH61 ERB30-15 ERC27-13 V09G U06C Cathode Anode 	1S188TV 1S1834 1S2076 ERB-24-02D ERB-24-04D ERB-24-06D SM-1-02FR SM-1-04FR SM-1.5-02FRT WZ-063 WZ-075 WZ-110 RD-6.2E RD-7.5E SIB01-02 RD12EB1 Cathode Anode GZA6.2Y 	LA1354 μPC596C 5 8 4 Mark 	LA1352 CA3065 LA1201 LA1363 LA1365 SN76666 μPC595C 8 9 14 7 6 5 4 3 2 1 Mark 
S2VC10R 	DS-113 Cathode Anode 	SV-31 Mark Anode Cathode 	SLP-131B Anode Cathode 	LA1385 μPC1031H2 1 2 3 10 

E : Emitter C : Collector B : Base S : Shield

- NOTES:
- Parts orders must contain Model Number, Parts Number and Description.
  - Ordering quantity of resistors, capacitors and screws must be multiple of 10 pcs.
  - Component parts indicated by parentheses in the column Q'ty are not available.







# SCHEMATIC DIAGRAM

## NOTES:

1. All resistance values in ohm.  
K = 1,000 M = 1,000,000
2. Unless otherwise noted in schematic diagram, all capacitors less than 1 are expressed in mfd and the values larger than 1 are in pF.
3. Voltage reading taken with High Impedance Voltmeter from point indicated to chassis ground, contrast at max., other controls at normal, local line voltage.
4. All waveforms measured with strong signal input, contrast set to give normal picture.
5. Voltage reading may vary  $\pm 20\%$ .
6. This is a fundamental circuit diagram. Some production changes may be made without revision of the diagram.

⚠: For SAFETY use only equivalent replacement parts.

